

Claims

- [c1] 1. An organic electroluminescent device, comprising:
a cathode;
an anode under the cathode;
an emitting layer, between the cathode and the anode;
a hole transport layer, between the emitting layer and the anode;
an electron transport layer, between the emitting layer and the cathode;
a hole injecting layer, between the hole transport layer and the anode; and
an intermediate layer, between the hole injecting layer and the hole transport layer, wherein the intermediate layer has a mobility higher than that of the hole transport layer.
- [c2] 2. The organic electroluminescent device according to claim 1, wherein the material of the intermediate layer includes derivative of triphenylamine.
- [c3] 3. The organic electroluminescent device according to claim 1, wherein the material of the intermediate layer includes derivative of tris-4, 4', 4''-(2-naphthyl)-triphenylamine.
- [c4] 4. The organic electroluminescent device according to claim 1, wherein the material of the cathode includes lithium fluoride/aluminum (LiF/Al) alloy.
- [c5] 5. The organic electroluminescent device according to claim 1, wherein the material of the anode includes indium tin oxide.
- [c6] 6. The organic electroluminescent device according to claim 1, wherein the material of the hole transport layer includes N, N'-Di(naphthalene-1-yl)-N, N'-diphenyl-benzidine) (NPB).
- [c7] 7. The organic electroluminescent device according to claim 1, wherein the material of the electron transport layer includes tri-(8-hydroxyquinoline) aluminum (Alq_3).
- [c8] 8. The organic electroluminescent device according to claim 1, wherein the material of the hole injecting layer includes derivative of phthalocyanine.

- [c9] 9. An organic electroluminescent device, comprising:
a cathode;
an anode, under the cathode;
an emitting layer, between the cathode and the anode;
an electron transport layer, between the emitting layer and the cathode;
a hole transport layer, between the emitting layer and the anode;
a hole injecting layer, between the hole transport layer and the anode; and
an intermediate layer, between the hole injecting layer and the hole transport layer, wherein the intermediate layer having a mobility higher than that of the hole injecting layer.
- [c10] 10. The organic electroluminescent device according to claim 9, wherein the material of the intermediate layer includes derivative of triphenylamine.
- [c11] 11. The organic electroluminescent device according to claim 9, wherein the material of the intermediate layer includes derivative of tris-4, 4', 4''-(2-naphthyl)-triphenylamine.
- [c12] 12. The organic electroluminescent device according to claim 9, wherein the material of the cathode includes lithium fluoride/aluminum (LiF/Al) alloy.
- [c13] 13. The organic electroluminescent device according to claim 9, wherein the material of the anode includes indium tin oxide.
- [c14] 14. The organic electroluminescent device according to claim 9, wherein the material of the hole injecting layer includes derivative of phthalocyanine.
- [c15] 15. The organic electroluminescent device according to claim 9, wherein the material of the hole transport layer includes N, N'-Di(naphthalene-1-yl)-N, N'-diphenyl-benzidine (NPB).
- [c16] 16. The organic electroluminescent device according to claim 9, wherein the material of the electron transport layer includes tri-(8-hydroxyquinoline) aluminum (Alq_3).